

REMARKS

This responds to the Office Action mailed on September 18, 2008. No claims are amended or cancelled. Claims 1-4, 6-7, 9-11, 14-17, 20, 22-25, 41-42, and 44-46 remain pending in this application.

Specification Objections

The specification was objected to as requiring antecedent basis for the term "halogenated hydrocarbon." The term "halogenated hydrocarbon" was originally presented in claim 43 of the present application. As such, the addition of the term to the paragraph beginning on page 10, line 2, of the specification does not constitute new matter. Withdrawal of the objection is respectfully requested.

Double Patenting Rejection

Claims 1-4, 6-7 and 10 were rejected under the judicially created doctrine of double patenting over claims 1-12, 14-18 and 20-22 of U.S. Patent No. 7,303,637 in view of Jackson et al. (U.S. 5,013,366; hereinafter "Jackson"). Claims 11 and 14-15 were rejected under the judicially created doctrine of double patenting over claims 1-2 and 8 of U.S. Patent No. 7,303,637 in view of Jackson. Claims 16-17 and 20 were rejected under the judicially created doctrine of double patenting over claims 1-2, 12, 15 and 18 of U.S. Patent No. 7,303,637 in view of Jackson. Claims 22-23 were rejected under the judicially created doctrine of double patenting over claims 1-2, 8 and 18 of U.S. Patent No. 7,303,637 in view of Jackson. Claim 22 was rejected under the judicially created doctrine of double patenting over claims 12 and 15-17 of U.S. Patent No. 7,303,637 in view of Jackson. Claims 41-42 and 46 were rejected under the judicially created doctrine of double patenting over claims 1-2, 12, 15 and 18 of U.S. Patent No. 7,303,637 in view of Jackson. Claims 1-4, 11, 14, 16-17, 20, 22, 41-42 and 44-46 were rejected under the judicially created doctrine of double patenting over claims 23-29 of U.S. Patent No. 7,303,637 in view of Jackson.

Claims 1-4, 6-7, 10-11, 14-17, 20, 22-23, 41-42, and 44-46 were rejected under a non-statutory double patenting rejection. All double patenting rejections rely on the 7,303,637

Patent. Applicant does not admit that the claims are obvious in view of U.S. Patent No. 7,303,637. However, Applicant will consider filing a Terminal Disclaimer to obviate these rejections once the claims are otherwise in condition for allowance.

§ 112 Rejection of the Claims

Claims 1-4, 6-7, 9-11, 14-17, 20, 22-25, 41-42 and 44-46 were rejected under 35 U.S.C. § 112, first paragraph, as lacking adequate description or enablement. Applicant respectfully traverses the rejection for at least the following reasons.

The rejection states that the subject matter of “brushing the semiconductor surface while the surface is in contact with a halogenated hydrocarbon carrier fluid” is not properly described in the application to support claims 1, 11, 16, 22, and 41. Applicant respectfully submits that Page 11, lines 7-12, recites:

In addition to the use of the supercritical state for mechanical energy, a brush cleaning system 630 with a number of bristles 632 is shown in block diagram form, in contact with the surface 604. In some embodiments, the mechanical energy supplied by the brush cleaning system 630 is desirable for removal of unwanted particles in addition to the energy provided by the supercritical fluid as described in embodiments above.

Figure 6 illustrates that brushing is contemplated while the surface is in contact with the carrier fluid 620. A halogenated hydrocarbon carrier fluid was originally disclosed in claim 43, and is now recited on page 10 as amended. Applicant respectfully submits that brushing the semiconductor surface while the surface is in contact a carrier fluid, along with the disclosed halogenated hydrocarbon carrier fluid example are sufficient to satisfy the enablement and written description requirement. Reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection are respectfully requested.

The rejection further states that there is no disclosure for “forming a supercritical fluid with any fluid other than carbon dioxide” as recited in claim 3. Applicant respectfully submits that Page 8, lines 27-31, recites:

In addition to a carbon dioxide atmosphere embodiment, other suitable atmospheres 422 include, but are not limited to, nitrous oxide, ethane, ethylene, propane, and xenon. In one embodiment, the supercritical state includes a

supercritical fluid formed from one of the gases listed above. In one embodiment the supercritical fluid includes ethyl alcohol, ethyl ether or methyl alcohol.

A halogenated hydrocarbon carrier fluid was originally disclosed in claim 43, and is now recited on page 10 as amended. Applicant respectfully submits that the above listed supercritical fluid recitation, along with the disclosed halogenated hydrocarbon carrier fluid example are sufficient to satisfy the enablement and written description requirement. Reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection are respectfully requested.

The rejection further states that there is no disclosure for "a mixture of a halogenated hydrocarbon carrier fluid which includes an acid cleaning solution" as claimed by claim 6. Applicant respectfully submits that Page 8, lines 2-8, recites:

In one embodiment, the carrier fluid 430 includes the solvent solution used to remove the processing layer 410. In one embodiment, the carrier fluid 430 *includes a subsequent cleaning* (emphasis added) or solvent solution. Carrier fluids include, but are not limited to, de-ionized water, H₂SO₄, and H₂O₂. In one embodiment, only selected surfaces of the semiconductor 400 are introduced to the carrier fluid 430. In one embodiment, the entire semiconductor 400 is immersed within the carrier fluid 430.

Carrier fluids are clearly contemplated with multiple components such as acid cleaning solutions as recited above. Further, a halogenated hydrocarbon carrier fluid or carrier fluid component was originally disclosed in claim 43, and is now recited on page 10 as amended. Applicant respectfully submits that the above listed fluids or components of carrier fluids, along with the disclosed halogenated hydrocarbon carrier fluid example are sufficient to satisfy the enablement and written description requirement. Reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection are respectfully requested.

Claims 2, 4, 7, 9-10, 14-15, 17, 20, 23-25, 42 and 44-46 were rejected under 35 U.S.C. § 112, first paragraph, as being dependent upon a rejection claim. Applicant respectfully submits that the rejected base claims of claims 2, 4, 7, 9-10, 14-15, 17, 20, 23-25, 42 and 44-46 are sufficient under 35 U.S.C. § 112, first paragraph as argued above. Reconsideration and withdrawal of the rejection with respect to the dependent claims are respectfully requested.

CONCLUSION


Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6944 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 12-18-08

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on December 18, 2008.

CHERYL L. DANKERS

Name


Signature